



PROGRESS TO DATE – FEBRUARY 2006

Developing a Tsunami Warning System for the Indian Ocean



US IOTWS Program focus countries



Lifeguard stations, such as this one in Phuket, Thailand, will play an important role in the rapid response of issuing tsunami warnings to coastal areas.

Meeting the Challenge of Saving Lives

Ever since the tsunami disaster of December 2004, developing an effective tsunami warning system for the Indian Ocean region has been a top priority for USAID. Tsunamis are among the most challenging disasters to address because decisions to take emergency action must be made and executed quickly—sometimes in a matter of minutes—covering large geographic areas that span international borders. Ultimately, every “link in the chain” of a warning system is critical for saving lives.

Through the USAID-funded U.S. Indian Ocean Tsunami Warning System (IOTWS) program, USAID, NOAA, USGS, USTDA, and the USDA Forest Service and are working with the international community to ensure government authorities, emergency responders, scientists, local communities, and others in the Indian Ocean region all have the necessary means of supporting the warning system.

Key Accomplishments

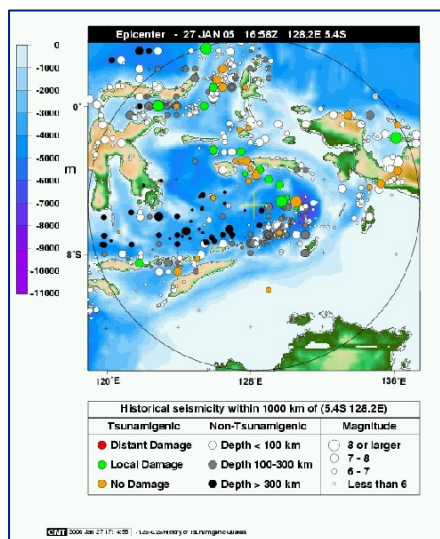
In the past year, the United States has provided critical support in a range of areas, both at a regional level and in the program’s five focus countries. Key highlights are provided as follows:

▪ Helping Governments React to Disasters More Effectively.

While the governments of some Asian countries have improved disaster response abilities in recent years, many still had great difficulty coping with the tsunami emergency in 2004. As a result, the US IOTWS Program is providing targeted support to build government capacity to manage complex disasters. For example, USAID is working in Sri Lanka and Thailand to introduce new system-wide disaster management procedures that allow government officials to plan for and react to disasters with greater coordination, speed, and flexibility. These countries will apply many of the same systems used in the U.S. for tsunamis and other emergency situations—such as hurricanes, tornados, winter storms, the Columbia Space Shuttle disaster, and the September 11 attacks.



The U.S. IOTWS Program is helping improve emergency response to disasters like the December 2004 tsunami.



PTWC earthquake bulletin January 27, 2006, showing a “no tsunami threat” earthquake in Indonesia’s Banda Sea.

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■ Designing a Warning System for the Indian Ocean Region.

As part of the international process to develop the IOTWS, several of the U.S.’s leading tsunami experts and seismologists have played a prominent role in developing the overall design of the region’s warning system. These efforts include finding the ideal locations for earthquake and tsunami detection equipment, establishing procedures for international coordination during tsunami alerts, and developing communications systems that include the “last kilometer” to local communities. U.S. involvement has strengthened regional cooperation and allowed countries in the region to learn first hand from the U.S.’s own experience in building a tsunami warning system—and to avoid pitfalls along the way.

- **Preparing Communities for Future Risks.** Recognizing the critical role of communities for saving lives, the U.S. is launching a *TsunamiResilient Communities* initiative that will give coastal cities and villages, as well as the tourism industry, the necessary tools to prepare for future disasters. This initiative will include pilot programs in each of the five focus countries where communities can adopt common benchmarks and best practices that can then be replicated to other neighboring communities. By following a standard approach across the region, it is hoped that citizens, school children, and tourists alike will all be able to follow the same instructions during an emergency no matter where they happen to be.

■ Providing Interim Warnings to the Indian Ocean Region.

Since January 2005, the U.S. Government has been monitoring earthquake and tsunami activities for the Indian Ocean on a 24/7 basis until a regional warning system is established. The Pacific Tsunami Warning Center (PTWC) in Hawaii has provided bulletins to the region on major events, including the March 2005 earthquake in Nias, Indonesia and the October 2005 earthquake in Pakistan. These bulletins have given governments in the region critical information during emergency situations, while also notifying authorities when no threat was present.

- **Sharpening Skills to Make the Right Decisions.** One of the greatest needs in the region is for government officials and scientists to receive training on a range of technical issues and management techniques. Some countries, for example, completely lack qualified seismologists or tsunami specialists who can participate in a functioning warning system. The US IOTWS program team has already begun rigorous training and technical exchange programs for Indian Ocean experts in the region itself and in the United States, Japan, and other strategic training locations around the Pacific. Most recently, the U.S. has initiated a series of seismology and geohazards trainings in Indonesia, Thailand, and Sri Lanka.

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